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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/800,113	03/12/2004	William Paul Ferguson	6770P008	8918

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EXAMINER
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PULLEY, MARSHALL L

ART UNIT	PAPER NUMBER
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3609

MAIL DATE	DELIVERY MODE
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07/23/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

**Application No.**

10/800,113

**Applicant(s)**

FERGUSON ET AL.

**Examiner**

Marshall L. Pulley

**Art Unit**

3609

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 3 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>3/12/2004</u> . | 6) <input type="checkbox"/> Other: ____.  |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-5 are rejected under 35 U.S.C. 102(b) as being unpatentable by Kyusojin et al., U.S. Patent No US20020114277.

3. As per claim 1, Kyusojin et al. teaches a method of synchronizing the filling of a queue, present at an interface between a packet network and a synchronous data link for storing packet identifiers identifying packets received from the packet network, to an incoming packet flow, the method comprising:

receiving a packet at said interface;

identifying the sequence number of said packet;

setting a read pointer, pointing to the next packet identifier to be read from the queue, to a value which is a predefined amount less than the identified sequence Number (Paragraph 0005-0006).

4. As per claim 2, Kyusojin et al. teaches a method according to claim 1, wherein said synchronous data link is a TDM link (Paragraph 0018).

5. As per Claim 3, Kyusojin et al. teaches a method according to claim 1, wherein

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said queue forms part of a packet buffer, the buffer comprising a memory for storing packet data, and the queue being arranged to store packet identifiers identifying packets received from the packet network and their respective storage locations within the buffer memory (Paragraph 0019).

6. As per claim 4, Kyusojin et al. teaches a method according to claim 3, wherein a queue scope is defined as the range of packet sequence numbers from the read pointer to the read pointer plus the queue size, and arriving packets having sequence numbers within the queue scope are accepted into the queue, whilst packets having sequence numbers outside of the queue scope are rejected as either late or early. (Paragraphs 0016-0018).

7. As per claim 5, Kyusojin et al. teaches a method of managing a buffer queue at an interface between a packet network and a synchronous data link, the method comprising determining the level of synchronization between a playout from the queue and the filling of the queue, and when this level falls below a certain threshold performing a synchronization method according to any one of the preceding claims (Paragraph 0012-0015).

8. Claims 6-13 are rejected under 35 U.S.C. 102(b) as being unpatentable by Caldara., U.S. Patent No US20010033572.

9. As per claim 6, Caldara et al. teaches a gateway for interfacing a packet network to a synchronous data link and having. an input for coupling to a packet network for

receiving packets therefrom and an output coupled to the synchronous data link for playing out synchronous data thereto, the apparatus comprising (Paragraphs 0090-0094):

a buffer having a memory for storing received packet data and a queue for storing packet identifiers identifying packets received from the packet network and their respective storage locations in the buffer memory (Paragraphs 0090-0091); and

processing means for identifying the sequence number of a received packet and for setting a read pointer, pointing to the next packet identifier to be read from the queue, to a value which is a predefined amount less than the identified sequence number (Paragraphs 0093-0094).

10. As per claim 7, Caldara et al. teaches a method of controlling the average length of a queue, present at an interface between a packet network and a synchronous data link, for storing packet identifiers identifying packets received from the packet network, the method comprising : (Paragraphs 0073)

maintaining a read pointer which points to the next packet identifier to be read from the queue (Paragraphs 0073) ;

extending the average queue length by responding to receipt of a next packet request from the synchronous data link transmitter by providing an under-run instruction and maintaining the read pointer unchanged (Paragraphs 0074) ; and

reducing the average queue length by responding to receipt of a next packet request from the synchronous data link transmitter by identifying to that transmitter a

packet of reduced size, and incrementing the read pointer (Paragraphs 0078) .

11. As per claim 8, Caldara et al teaches a method according to claim 7, wherein said step of reducing the average queue length comprises modifying a packet length field in a header of packet data stored in a buffer memory and pointed to by said packet identifiers (Paragraphs 0079).

12. As per claim 9, Caldara et al teaches a method according to claim 7, wherein said synchronous data link is a TDM link (Paragraphs 0005) .

13. As per claim 10, Caldara et al teaches a method according to claim 7, wherein said queue forms part of a packet buffer, the buffer comprising a memory for storing packet data, and the queue being arranged to store packet identifiers identifying packets received from the packet network and their respective storage locations within the buffer memory (Paragraph 0073).

14. As per claim 11, Caldara et al teaches a method according to claim 10, wherein a queue scope is defined as the range of packet sequence numbers from the read pointer to the read pointer plus the queue size, and arriving packets having sequence numbers within the queue scope are accepted into the queue, whilst packets having sequence numbers outside of the queue scope are rejected as either late or early (Paragraph 0032 and Figure 13).

15. As per claim 12, Caldara et al teaches a gateway for interfacing a packet network to a synchronous data link and having an input for coupling to a packet network for receiving packets therefrom and an output coupled to the synchronous data link for

playing out synchronous data thereto, the apparatus comprising (Paragraph 0034):

a buffer having a memory for storing received packet data and a queue for storing packet identifiers identifying packets received from the packet network and their respective storage locations in the buffer memory (Paragraph 0094);

and

control means for maintaining a read pointer which points to the next packet identifier to be read from the queue and for extending the average queue length by responding to receipt of a next packet request from the synchronous data link transmitter by providing an under-run instruction and maintaining the read pointer unchanged, and reducing the average queue length by responding to receipt of a next packet request from the synchronous data link transmitter by identifying to that transmitter a packet of reduced size, and incrementing the read pointer (Paragraph 0072-0074).

16. As per claim 13, Caldara et al teaches a gateway according to claim 12, wherein the control means comprises means for monitoring the length of said queue, for determining an optimum average queue length, and for initiating extend and reduce operations in order to maintain the average queue length at said optimum average queue length (Paragraph 0078-0079).

### ***Conclusion***

17. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Applicant is required under 37 CFR 1.11(c) to consider references fully when responding to this action.

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The following are pertinent to current invention, though not relied upon:

Kosuge et al. (U.S. Patent No. 4575844) teaches digital switching system.

Petty et al. (U.S. Patent No. 6178184) teaches arrangement for synchronization of multiple streams of synchronous traffic delivered by an asynchronous medium.

Caldara et al. (U.S. Patent No. 20010033572) teaches switching system and method having low, deterministic latency.

Ofek et al. (U.S. Patent No. 6330236) teaches packet switching method with time-base routing.

Rezaie et al. (U.S. Patent No. 20020021713) teaches dialable data services/TDM bandwidth management.

KU et al. (U.S. Patent No. 20020085565) teaches technique for time division multiplex forwarding of data streams.

Kyusojin et al. (U.S. Patent No. 20020114277) teaches Communication device and communication method.

Won et al. (U.S. Patent No. 6510163) teaches network interface for interfacing PDH network and ATM network.

Romy et al. (U.S. Patent No. 20030219021) teaches packet switching access platform.

Sproat et al. (U.S. Patent No. 20040042480) teaches network service provider architecture in communications network.

Lebizay et al. (E.P. Patent No. 19951011) teaches efficient point to point and multi point routing mechanism for programmable packet switching.



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Any inquiry concerning this communication from the examiner should be directed to Marshall L. Pulley whose telephone number is (571)270-3275. The examiner can normally be reached on 7:00 AM-4:30PM (Monday-Friday); 1<sup>st</sup> Friday OFF.

Marshall L. Pulley



MATTHEW S. GART  
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